S/020/60/132/04/33/064
B011/B003

5.3700(B)

AUTHORS: Perevalova, E. G., Nesmeyanova, O. A., Luk'yanova, I. G.

TITLE: Ferrocenesulfinic Acids

PERIODICAL: Doklady Akademii nauk SSSR, 1960, Vol. 132, No. 4, pp. 853-856

TEXT: In a previous paper the authors described the production of ferrocenesulfinic acid (Ref. 1). In the article under review, they synthesized ferrocenedisulfinic acid and examined the properties of both acids. Ferrocenedisulfinic acid was obtained by reduction of the acid chloride of ferrocenedisulfonic acid with zinc dust. It is difficultly soluble in water and organic solvents. Its solutions are rapidly decomposed, and its disodium salt is much more stable. Both mono- and diferrocenesulfinic acid react with sublimates in a similar way as benzosulfinic acid and yield large quantities of mono- and di-(chloromercury)-ferrocene. The authors tried to obtain in a similar way a ferrocene derivative of tin by action of tinchloride on the sodium salt of sulfinic acid. They found, however, that a reduction

Ferrocenesulfinic Acids

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results from which the tin dithioferrocenolate is formed. Previously (Ref. 2) the authors obtained phenylferrocenyl sulfone and diferrocenyl sulfone by the action of halogen anhydrides of the corresponding sulfonic acids on diferrocenyl mercury. Here, the authors synthesized benzyltriphenylmethyl- and picrylferrocenyl sulfone. For this purpose the sodium salt of ferrocenemonosulfinic acid was reacted with benzyl chloride, triphenylchloromethane, and picryl chloride, respectively. The authors obtained large yields (80-88% of the theoretical yield) (see Scheme). A large quantity of ferrocenyl (ferrocenylmethyl) sulfone was obtained by heating the aqueous solution of the sodium salt of ferrocenesulfinic acid with iodine methylate of (N,N-dimethylaminomethyl) ferrocene (see Scheme). L. S. Shilovtseva and A. A. Ponomarenko participated in the experiments. There are 5 references, 4 of which are Soviet.

ASSOCIATION: Moskovskiy gosudarstvennyy universitet im. M. V. Lomonosova (Moscow State University imeni M. V. Lomonosov)

Card 2/3

Ferrocenesulfinic Acids

S/020/60/132/04/33/064
B011/B003

PRESENTED: January 12, 1960, by A. N. Nesmeyanov, Academician

SUBMITTED: January 3, 1960

Card 3/3

FUKS, B.B.; KONSTANTINOVA, I.V.; STEFANOVICH, L.Ye.; LUK'YANOVA, I.G.; TSYGANKOV, L.I.; KOLAYEVA, S.G.; KRASS, I.M.; VAN'KO, L.V.

Specific biosynthesis of antibodies induced by ribonucleic acid from the lymphatic nodes and spleen of immune rabbits. Dokl. AN SSSR 153 no.2:485-488 N '63. (MIRA 16:12)

1. Institut tsitologii i genetiki Sibirskogo otdeleniya AN SSSR. Predstavleno akademikom A.N.Belozerskim.

GOLENETSKIY, S.I.; LUK'YANOVA, I.G.

Hodographs of seismic waves based on the observations of aftershocks in the middle Lake Baikal region on August 29, 1959. Trudy Inst. zem. kory SO AN SSSR no.18:25-36 '64. (MIRA 18:11)

GORBATSEVICH, Z.N.; LUK'YANOVA, I.P.

Sensory innervation of nerve trunks. Arkh. anat., gist. i embr. 43 no.8:43-47 Ag '62. (MIRA 17:8)

1. Kafedra gistologii (ispolnyayushchiy obyazannosti zaveduyushchego dotsent Z.N. Gorbatsevich) Kurskogo gosudarstvennogo meditsinskogo instituta.

GORBATSEVICH, Z.N., dotsent; LUK'YANOVA, I.P., assistent

Some data on sensory innervation in the human sciatic nerve. Sbor. trud. Kursk. gos. med. inst. no.13:270-273 '58. (MIRA 14:3)

1. Iz kafedry gistologii (ispolyayushchiy obyazannosti zav. - dotsent Z.N.Gorbatsevich) Kurskogo gosudarstvennogo meditsinskogo instituta.

(SCIATIC NERVE)

TUPIKOVA, N.V., LUK'YANOVA, I.V., NERONOV, V.M., RAKOVSKAYA, E.M.

Quantitative characteristics and mapping of the populations of small mammals in mountain steppes of the Altai. Biul.MOIP. Otd. biol. 63 no.5:145-146 S-O '58 (MIRA 11:12)
(ALTAI MOUNTAINS--RODENTIA)

LUK'YANOVA, I.V.; SAPEGINA, V.F.

Role of various species of small mammals as hosts of ixodid ticks in the forest-steppe foothills of the Altai. Izv. Alt. otd. Geog. ob-va SSSR no.5:175-177 '65. (MIRA 18:12)

1. Biologicheskiy institut Sibirskogo otdeleniya AN SSSR.

LUK'YANOVA, K.N.

Determination of compositions of the gaseous phase in equilibrium with liquids in which NH_4Cl and $Mg(OH)_2$ are reacting. Ukr.khim.zhur. 24 no.6:718-725 '58. (MIRA 12:3)

1. Nauchno-issledovatel'skiy institut osnovnoy khimii.
(Ammonium chloride) (Magnesium hydroxide)
(Phase rule and equilibrium)

LUK'YANOVA, L.; LOMAKIN, L.; MOROZOV, V.

Three simple superheterodyne receivers. Radio no.8:34-39 Ag '60. (MIRA 13:9)
(Radio--Receivers and reception)

GAGARINSKIY, Yu.V.; RUCHKIN, Ye.D.; LUK'YANOVA, L.A.; KUSTOVA, G.N.; BATSANOV, S.S.

Crystal chemical study of thorium tetrafluoride hydrates. Izv. SO AN SSSR no.11 Ser.khim.nauk no.3:8-16 '63. (MIRA 17:3)

L 35839-66 EWT(m)/EWP(t)/ETI IJP(c) ES/WW/JW/JD/JG

ACC NR: AP6016127 (N) SOURCE CODE: UR/0289/66/000/001/0131/0133

AUTHOR: Khripin, L. A.; Luk'yanova, L. A. 37 B

ORG: Institute of Inorganic Chemistry, Siberian Branch of the AN SSSR, Nosibirsk (Institut neorganicheskoy khimii, Sibirskogo otdeleniya AN SSSR)

TITLE: The binary system uranium tetrafluoride-uranium dioxide

SOURCE: AN SSSR. Sibirskoye otdeleniye. Izvestiya. Seriya khimicheskikh nauk, no. 1, 1966, 131-133

TOPIC TAGS: alloy phase diagram, uranium compound, THERMAL ANALYSIS

ABSTRACT: The uranium tetrafluoride used was purified of its UO_2F_2 and UO_2 impurities by vacuum distillation under residual pressure of the order of 10^{-4} mm Hg at a temperature of about 1000°. Tests were made with the weight percent of UO_2 varying from 0 to 72.5%. The system was studied by differential thermal analysis. The experimental results are listed in a table and a phase diagram is constructed based on the data. The results indicate that the melting point of UF_4 changes comparatively little if the content of uranium dioxide does not exceed about 10%. With the presence in the mixture of up to 20% UO_2, the melting point is

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UDC: 541.123.2

L 35839-66

ACC NR: AP6016127 O

lowered by almost 60°, which does not confirm earlier literature data. It was established that this system (up to 75% UO_2) belongs to the simple eutectic type. The eutectic corresponds to a temperature of 920° and a composition with 24.5 weight percent UO_2. The results are compared with existing literature data. Orig. art. has: 1 figure and 1 table.

SUB CODE: // SUBM DATE: 03Aug65/ ORIG REF: 002/ OTH REF: 005

Card 2/2

OPALOVSKIY, A.A.; KUZNETSOVA, Z.M.; LUK'YANOVA, L.A.

Physicochemical study of the interaction of iodine pentoxide with sodium and potassium fluorides. Izv. Sib. otd. AN SSSR no.6:54-58 '62 (MIRA 17:7)

1. Institut neorganicheskoy khimii Sibirskogo otdeleniya AN SSSR, Novosibirsk.

L 58902-65 EPF(c)/EPF(n)-2/EPR/EWA(c)/EWT(m)/EWP(b)/T/EWP(t) Pr-4/Ps-4/Pu-4 IJP(c) ES/WW/JW/JD/JG

ACCESSION NR: AP5017056 UR/0289/65/000/001/0014/0019
546.791.4:536.42:541.123.1

AUTHOR: Khripin, L. A.; Gagarinskiy, Yu. V.; Luk'yanova, L. A.

TITLE: Phase transformations of uranium tetrafluoride and tetrachloride

SOURCE: AN SSSR. Sibirskoye otdeleniye. Izvestiya. Seriya khimicheskikh nauk, no. 1, 1965, 14-19

TOPIC TAGS: uranium fluoride, uranium chloride, phase transformation

ABSTRACT: The melting points and polymorphic transformations of UF_4 and UCl_4 were determined by differential thermal analysis (DTA), in which the heating and cooling curves were recorded with an FPK-59 Kurnakov pyrometer. In the case of UF_4, besides the exothermic effect at 1008C corresponding to the solidification, there is a second exothermic effect at 837C (see Fig. 1A of the Enclosure), which is attributed to the polymorphic transformation of the low-temperature α form of UF_4 into the high-temperature β form. Fig. 1B shows the cooling curve of UF_4 in the presence of supercooling, which causes the value of the melting point (965C) to be low. The heating and cooling curves of UCl_4 are shown in Fig. 2A and B of the Enclosure. The melting point is displayed at 565C, and a polymorphic transformation occurs at 542-548C. Because these points are close

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L 58902-65

ACCESSION NR: AP5017056

2

to each other, the polymorphic transformation effect is not resolved into an individual peak; instead, it is superimposed on the effect of melting or solidification. The heat of transformation for UF_4 was calculated to be about 3.4-3.8 kcal/mole, and that of UCl_4, approximately 2.8 kcal/mole. "In conclusion, the authors express their appreciation to V. A. Mikhaylov for valuable suggestions." Orig. art. has: 2 figures and 2 tables.

ASSOCIATION: Institut neorganicheskoy khimii Sibirskogo otdeleniya AN SSSR, Novosibirsk (Institute of Inorganic Chemistry, Siberian Branch, AN SSSR)

SUBMITTED: 13Jul64 ENCL: 02 SUB CODE: IC

NO REF SOV: 006 OTHER: 033

Card 2/4

KHRIPIN, L.A.; GAGARINSKIY, Yu.V.; LUK'YANOVA, L.A.

Phase transitions of uranium tetrafluoride and tetrachloride. Izv. SO AN SSSR no.3 Ser. khim. nauk no.1:14-19 '65. (MIRA 18:8)

1. Institut neorganicheskoy khimii Sibirskogo otdeleniya AN SSSR, Novosibirsk.

L 13952-66 EWT(m)/EPF(n)-2/EWP(t)/EWP(b) IJP(c) ES/JD/WW/JW/JG/DM

ACC NR: AP6001693 (N) SOURCE CODE: UR/0089/65/019/005/0437/0441

AUTHOR: Khripin, L. A.; Gazarinskiy, Yu. V.; Zadneprovskiy, G. M.; Luk'yanova, L. A.

ORG: none

TITLE: The binary UF_4-UCl_4 system

SOURCE: Atomnaya energiya, v. 19, no. 5, 1965, 437-441

TOPIC TAGS: uranium compound, halide, x ray analysis, thermal analysis, phase diagram

ABSTRACT: Mixed uranium halogenides are, evidently, the least known of the halide compounds of the fourvalent uranium. The authors investigated the binary UF_4-UCl_4 system by differential thermal analysis and x-ray methods and established its phase diagram. The system contains three uranium compounds: UCl_2F_2, $UClF_3$, and (not previously reported) UCl_3F. All three compounds melt in an incongruent manner at 460±3, 530±6, and 444±2C, respectively. No solid solutions have been found. The authors determined in general the optimum conditions for the production of pure systems of the compounds from binary UCl_4-UF_4 melts. On the basis of the phase diagram obtained, explanations are given for the apparently contradictory results obtained by other authors in studies of the methods for the synthesis of UCl_2F_2 and $UClF_3$. Orig. art. has: 6 formulas and 2 figures.

SUB CODE: 07/ SUBM DATE: 02Dec64/ ORIG REF: 002/ OTH REF: 005

Card 1/1

UDC: 546.791.4

20-114-6-22/54

AUTHOR: Luk'yanova, L. D.

TITLE: On the Effect Produced by X-Rays Upon the State of the Placentary Barrier at Different Periods of Pregnancy (K voprosu o deystvii rentgenovskikh luchey na sostoyaniye platsentarnogo bar'yera v raznyye periody beremennosti)

PERIODICAL: Doklady Akademii Nauk SSSR,1957,Vol.114,Nr 6,pp.1217-1219(USSR)

ABSTRACT: At the beginning reference is made to relevant earlier works. By means of radioactive P^{32} the author studies the effect produced by the radiation with X-rays on the permeability of the placentary barrier at different periods of pregnancy. The work was performed on rabbits (haemochorial type of placenta). The pregnant rabbits were irradiated for about 2 hours with a dose of 1000 r. P^{32} served as indicator of permeability. The blood of the mother and of the fetus were investigated, as well as the homogenate of the fetus and the homogenate of the placenta. The tests were carried out after a duration of pregnancy of 15, 20, 25 and 29 days. The permeability for phosphorus of the placentary barrier at different

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On the Effect Produced by X-Rays Upon the State of the Placentary Barrier at Different Periods of Pregnancy

periods of pregnancy in non-irradiated animals: The retention of P^{32} by the fetus increases with increasing pregnancy and reaches its maximum before birth. But in the placenta the content of P^{32} decreases with increasing pregnancy. The largest quantity of phosphorus is absorbed by the fetus during the period of differentiation of the organs and ossification of the cartilage, i.e. during the second period of pregnancy. The influence of radiation on the permeability of the placentary barrier at different periods of pregnancy: The P^{32} content in the tissues of the placenta and of the fetus is considerably lower in animals irradiated with 1000 r than in the corresponding tissues of non-irradiated animals. The quantity of P^{32} determined in the homogenates of the tissues of the fetus decreases 2 - to 3-fold after irradiation. Still more farreaching shifts occur in the tissues of the placenta; after 15 days pregnancy the P^{32} content decreases to the 5,6-fold of the norm. Causes for this farreaching disturbance of the phosphorus exchange between mother and fetus are pointed out. There are 2 figures and 6 references, 2 of which are Slavic.

20-114-6-22/54

On the Effect Produced by X-Rays Upon the State of the Placentary Barrier at Different Periods of Pregnancy

ASSOCIATION: Institute for Biological Physics of the AS USSR
(Institut biologicheskoy fiziki Akademii nauk SSSR)

PRESENTED: February 19, 1957, by L. S. Shtern, Member of the Academy

SUBMITTED: February 9, 1957

Card 3/3

LUK'YANOVA, L.D.

Effect of X rays on the placental barrier during different stages of pregnancy. Biofizika 4 no.5:574-581 '59. (MIRA 14:6)

1. Institut biologicheskoy fiziki AN SSSR, Moskva.
(PLACENTA) (X RAYS--PHYSIOLOGICAL EFFECT)
(PHOSPHORUS METABOLISM)

NIZHNIK, G.V.; LUK'YANOVA, L.D.

Effect of X rays on the permeability of the placenta and histo-hematic barriers of the fetus in maternal organisms irradiated at different periods of pregnancy. Zhur.ob.biol 20 no.6:477-478 N-D '59. (MIRA 13:4)

1. Institute of Biological Physics, Academy of Sciences of the U.S.S.R., Moscow.
(X RAYS--PHYSIOLOGICAL EFFECT) (FETUS) (CAPILLARIES--PERMEABILITY)

LUK'YANOVA, L.D., Cand Bio-Sci (diss) "The effect of X-irradiation on the state of placental barrier at various stages of pregnancy,"

Moscow, 1960, 17 pp (Institute of Morphology of Animals im A. N. Severtsev, AS USSR). (KL, 39-60, 114)

30351

27.1220

S/205/61/001/004/010/032
D298/D303

AUTHORS: Nizhnik, G. V. and Luk'yanova, L. D.

TITLE: The effects of X-rays on the passage of phosphorus through the placentary and histohematic barriers of the embryo

PERIODICAL: Radiobiologiya, v. 1, no. 4, 1961, 517-521

TEXT: Due to the lack of research on the subject, a study was made of the effects of various doses of X-rays on the state of the placentary and histohematic barriers of the embryo with irradiation of the mother at various stages of pregnancy. Pregnant rabbits were irradiated with an РУП-1(RUP-1) apparatus at an intensity of 8.6 r/min. With single irradiation, the animals received doses of 600 or 1,000 r at definite stages of pregnancy (on the 15th, 20th, 29th and 30th days). With multiple irradiation, the rabbits received a dose of 10 or 25 r daily. Radioactive phosphorus ($Na_2HP^{32}O_4$) in a dose of 15 - 20 μc/kg of the

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30357

S/205/61/001/004/010/032
D298/D303

The effects of X-rays...

animal's weight was used as an indicator of penetrability. It was found that single irradiation of the pregnant rabbits in doses of 600 - 1,000 r inhibited the penetration of phosphorus into the embryo's brain at all stages of its development. Similar results were obtained from a study of the embryo's other tissues. The reduction in the phosphorus content varied directly with the radiation dose. With multiple irradiation, no notable changes were observed in the phosphorus content of the brain and muscle tissues in the offspring of the irradiated rabbits. Continuation of pregnancy was noted in only 58% of those rabbits exposed to repeated irradiation in the first half of pregnancy. The litter from these animals did not exceed 40% of the normal litter. In animals irradiated in the second half of pregnancy, a continuation of pregnancy was noted in 70% of the cases and the litter averaged 75% of normal. There are 4 tables and 8 references: 4 Soviet-bloc and 4 non-Soviet-bloc. The references to the English-language publications read as follows: L. Bakay, Arch. Neurol. and Psychiatry, 70, 1, 1953; S. W. Wilde, D. B. Cowie, L. B. Flener, Amer. J. Physiol., 147, 360, 1946; P. E. Nielson, Amer. J. Physiol., 135, 3, 670, 1941/1942; G. Popjak, Cold Spring Harbor Symposium

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30351
S/205/61/001/004/010/032
D298/D303

The effects of X-rays...

Quant. Biol., 19, 200, 1954.

ASSOCIATION: Institut biologicheskoy fiziki AN SSSR (Institute of Biophysics, AS USSR), Moscow

SUBMITTED: June 22, 1959

Card 3/3

LUK'YANOVA, L.D.

Observations on the conditioned response activity of albino rats at remote dates after the flight in the second spaceship. Probl. kosm.biol. 1:171-180 '62. (MIRA 15:12)
(CONDITIONED RESPONSE)(SPACE FLIGHT--PHYSIOLOGICAL EFFECT)

S/865/62/002/000/019/042
D405/D301

AUTHORS: Luk'yanova, L.D., Livshits, N.N., Apanasenko, Z.I. and Kuznetsova, M.A.

TITLE: Long-range effect of space flight on higher nervous system and some unconditional reflexes

SOURCE: Problemy kosmicheskoy biologii. v. 2. Ed. by N. Sisakyan and V. Yazdovskiy. Moscow, Izd-vo AN SSSR, 1962, 192-205

TEXT: The higher nervous activity of rats prior to, and after flight on the Second Space Ship was investigated, as well as the vestibular reflexes, the latent period of the unconditional motric defensive reflex and the spontaneous bioelectric muscular activity of guinea pigs. Simultaneously, the morphological state of the peripheral blood, weight, and general condition were studied. The experiments were conducted on white male-rats by Kotlyarevskiy's method. Conclusions: The flight on the Second Space Ship did not lead to appreciable changes in the conditional reflex activity of

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Long-range effect ...

the two white rats during the period of the experiments (from the fourth day after landing to the natural death of the animals). The flight of the guinea pig on the Fourth Space Ship did not lead to changes in the latent period of the unconditioned reflex. An increase in the spontaneous bioelectric activity of the extremity muscles was observed in the guinea pig after the flight. In the latter, a decrease in the latent period of the vestibular reflex and an increase in its activity was also observed. It is suggested that the change in the characteristics of the vestibular reflex, observed in the guinea pig after the flight, is related to functional changes in the afferent or central neurons, and possibly in both these types of neurons. There are 7 figures.

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43984

27,1140

S/560/62/000/012/006/014
I015/I215

AUTHOR: Luk'yanova, L.D.

TITLE: The higher nervous activity in albino rats from the second space ship - sputnik

SOURCE: Akademiya nauk SSSR. Iskustvennyye sputniki Zemli, Moscow, no.12, 1962, 51-55

TEXT: Two rats were put on the space ship and 5 animals were kept at identical conditions before the flight and served as controls. Conditioned reflexes were elaborated according to the method of Kotlyarevskiy in all the animals several months prior to the space flight. The reflexes and the blood picture were examined after landing. The first examination was carried out on the 4th day, the last examination - after 75 days. It was found that the higher nervous activity of the rats was almost unaltered following this particular space flight as compared with the controls. There are 4 figures and 1 table.

SUBMITTED: July 8, 1961

Card 1/1

ACCESSION NR: AT4042701 S/0000/63/000/000/0346/0348

AUTHOR: Luk'yanova, L. D.

TITLE: The effects of vibration and irradiation on oxidative processes in brain tissues of rats

SOURCE: Konferentsiya po aviatsionnoy i kosmicheskoy meditsine, 1963. Aviatsionnaya i kosmicheskaya meditsina (Aviation and space medicine); materialy* konferentsii. Moscow, 1963, 346-348

TOPIC TAGS: vibration effect, oxidation of brain tissue, radiation effect, partial oxygen pressure

ABSTRACT: Experiments have been performed for the purpose of determining the effect of vibration on the partial oxygen pressure and the rate of oxidation in various parts of the brain. Partial oxygen pressure was measured by means of an "oxygen cathode." Experiments have indicated that vertical vibration of animals (frequency 70 cps, amplitude 0.4 mm, duration of action 15 min) causes completely regular changes in the utilization of oxygen by brain tissues.

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ACCESSION NR: AT4042701

Oxygen consumption during vibration increases sharply. Animals who have been subjected to vibration many times (up to 10) increase their oxygen consumption more rapidly and return to normal consumption rate more slowly than animals which have been subjected to vibration only once. Various areas of the brain respond differently to vibration. Most distinct changes in oxygen consumption in response to vibration are found in the motor area of the brain. Investigation of changes of partial oxygen pressure in brain tissues of animals which have been subjected to the combined action of vibration followed by irradiation has shcwn that the effects of vibration are dominant.

ASSOCIATION: none

SUBMITTED: 27Sep63 ENCL: 00 SUB CODE: LS

NO REF SOV: 000 OTHER: 000

Card 2/2

L 25802-65 EWG(a)/EWG(c)/EWG(j)/EWG(r)/EWG(v)/EWT(l)/FS(v)-3 Pe-5
ACCESSION NR: AT5003092 DD/MLK S/0000/64/000/000/0128/0144 27
20
B+1

AUTHOR: Luk'yanova, L. D.

TITLE: The effects of repeated vibration on the oxygen tension in the brains of rats

SOURCE: AN SSSR. Institut biologicheskoy fiziki. Vliyaniye ioniziruyushchikh izlucheniy i dinamicheskikh faktorov na funktsii tsentral'noy nervnoy sistemy; voprosy kosmicheskoy fiziologii (Effect of ionizing radiation and dynamic factors on the function of the central nervous system; problems in space physiology). Moscow, Izd-vo Nauka, 1964, 128-144

TOPIC TAGS: vibration effect, oxygen tension, rat brain, oxygen cathode method, oxygen consumption

ABSTRACT: Experiments were performed in order to determine the effects of vibration on oxidative processes in brain tissues, particularly the utilization of oxygen by these tissues. Oxygen tension in the brain was determined by Davies' and Brink's "oxygen cathode" method. Platinum electrodes were embedded in the sensory-motor and the auditory parts of the cortex and the pallidum of the corpus striatum. Exposure of the animals to 15 min of vibration (frequency,70 cps; amplitude,0.4 mm)

Card 1/3

caused the development of 3 successive phases: 1) lowered oxygen tension accompanied by increased oxygen consumption in brain tissues; 2) increased oxygen tension accompanied by a drop in consumption; and 3) an adaptive phase. Repeated exposure to vibration under similar conditions led to an increase in the duration of the first phase (increased oxygen utilization in brain tissues), and to increased duration and magnitude of the second phase (lowered oxygen utilization). Even though the data obtained were statistically significant, there was considerable individual variation in the observed changes in oxygen tension and oxygen consumption. These individual variations in the three phases tended to decrease with repeated exposure to vibration. Vibration-induced changes in oxygen consumption were not uniform in all parts of the brain studied. Vibration also produced distinct changes in blood composition, i.e., decrease in the number of lymphocytes during the first hour, followed by leukocytosis. The authors conclude that the degree of vibration-caused stimulation varies in different parts of the brain; that in the sensory-motor area of the cortex, and apparently also in the auditory part of the cortex, adaptation to vibration does not occur; and that the observed changes in oxygen tension and oxygen consumption in brain tissues reflect a specific state of nerve tissue which develops in response to the effects of vibration. Orig. art. has: 6 figures and 3 tables. [BM]

APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001030820017-9"

L 25802-65
ACCESSION NR: AT5003092

ASSOCIATION: none

SUBMITTED: 08Sep64 ENCL: 00 SUB CODE: PH,LS

NO REF SOV: 000 OTHER: 000 ATD PRESS: 3183

Card 3/3

L 25803-65 EWG(a)/EWG(c)/EWG(j)/EWG(r)/EWG(v)/EWT(l)/EWT(m)/FS(v)-3 · Pe-5
ACCESSION NR: AT5003093 DD/MLK S/0000/64/000/000/0145/0160 3 2 2 B+1

AUTHOR: Luk'yanova, L. D.

TITLE: The combined effects of whole-body vertical vibration 2 and irradiation 2 on the oxidative processes in the brains of rats

SOURCE: AN SSSR. Institut biologicheskoy fiziki. Vliyaniye ioniziruyushchikh izlucheniy i dinamicheskikh faktorov na funktsii tsentral'noy nervnoy sistemy; voprosy kosmicheskoy fiziologii (Effect of ionizing radiation and dynamic factors on the function of the central nervous system; problems in space physiology). Moscow, Izd-vo Nauka, 1964, 145-160

TOPIC TAGS: vibration effect, radiation effect, whole body vibration, whole body irradiation, rat brain, oxygen tension, oxygen consumption

ABSTRACT: In order to test the combined effects of vibration and irradiation on oxygen tension and oxygen consumption in brain tissues, white rats were subjected to 15 min of vertical vibration (frequency, 70 cps; amplitude, 0.4 mm) followed 15 min later by irradiation with 600 r (dose rate varied from 22 to 43 r/min). A second group of rats was exposed to a similar irradiation dose without preliminary vibration. In addition to the primary observations on oxygen tension and oxygen

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L 25803-65
ACCESSION NR: AT5003093

consumption in brain tissues, condition of the blood, weight, and general clinical condition and viability of the animals were also monitored. Exposure to a lethal dose of radiation (600 r) changed the metabolic processes in the higher centers of the brain, resulting in depressed oxygen consumption in the sensory-motor and the auditory parts of the cortex and the motor part of the subcortex in the first hours after irradiation. Analysis of the dynamics of oxygen consumption in brain tissues as radiation sickness developed showed a significant parallel between the functional state of the nerve centers and oxidative processes occurring in the brain. The changes observed in the oxidative processes following vibration with subsequent irradiation differed in their development from those observed following irradiation alone. The percentage of survivals in animals exposed to the combined effects was much higher than in those exposed to irradiation alone. Orig. art. has: 7 figures and 1 table. [BM]

ASSOCIATION: none

SUBMITTED: 08Sep64 ENCL: 00 SUB CODE: PH, LS

NO REF SOV: 000 OTHER: 000 ATD PRESS: 3183

Card 2/2

LUK'YANOVA, L.D., kand.biolog.nauk

Symposium on electrochemical methods and principles in molecular biology held in Jena. Vest.AN SSSR 35 no.8:75 Ag '65.
(MIRA 18:8)

L 47293-66 EEC(k)-2/EWT(1)/FCC/FSS-2 SCTB TT/DD/RD/GW 6

ACC NR: AP6031663 SOURCE CODE: UR/0216/66/000/005/0625/0643

AUTHOR: Frank, G. M.; Livshits, N. N.; Arsen'yeva, M. A.; Apanasenko, Z. I.; Belyayeva, L. A.; Golovkina, A. V.; Klimovitskiy, V. Ya.; Kuznetsova, M. A.; Luk'yanova, L. D.; Meyzerov, Ye. S. 70 69 B

ORG: Institute of Biological Physics, AN SSSR (Institut biologicheskoy fiziki AN SSSR)

TITLE: The combined effect of spaceflight factors on some functions of the organism

SOURCE: AN SSSR. Izvestiya. Seriya biologicheskaya, no. 5, 1966, 625-643

TOPIC TAGS: central nervous system, biologic oxidation, biologic metabolism, reflex activity, brain tissue, radiation effects, ~~ionizing~~ radiation biologic effect, ionizing radiation

ABSTRACT: Results of experiments studying the combined effect of spaceflight factors (acceleration, vibration, and radiation) on some functions of the organism (brain hemodynamcis, CNS functions, and cell division of hematopoietic organs) are discussed. Tolerance of the CNS to accelerations depends significantly on changes of brain hemodynamics during accelerations. Brain blood flow in rabbits subjected to centrifugal accelerations in the head-foot direction (5 G in head region and 10 G in pelvis region) for 12 to 60 sec decreased. This reaction was insignificant during the first exposure, sharply increased during repeated exposure, and weakened after chronic exposure, thus indicating that tolerance to accelerations can be

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L 07793-66

ACC NR: AP6031663

increased by training. Participation of CNS reflex mechanisms in these processes is probable. The 15-min exposure of guinea pigs to radial accelerations (8 G), centrifuged twice with a one-day interval, increased the spontaneous bioelectrical activity of extensor muscles; however, the effect was not lasting. It was lowered the day after the second centrifugation and was essentially the same as the control from the sixth day. The 15-min exposure of the animals to vibrations (70 cps, 0.4 mm amplitude), twice with a one-day interval, produced less distinct but more stable changes, with normalization more than 25 days after the first vibration exposure. Changes in myoelectric activity during spaceflight (Sputnik-4) incorporated features of both acceleration and vibration effects, appreciably exceeding them in intensity. Oxidation processes in brain tissues, judged by QO_2 and "oxygen test" results, were initially increased in intensity by the effect of vibrations (using the above parameters), and subsequently underwent phase changes, including depression of oxidation metabolism during the aftereffect period. Changes in unconditioned defense and vestibulotonic reflexes and upper nervous activity were observed later than 12 days after vibration. Inhibition of food-procuring conditioned and defensive unconditioned reflexes in the majority of animals, with pronounced parabiotic phenomena, was also found. Exposure to 8-, 10-, and 20-G accelerations and vibration (700 cps, 0.005 mm, 60 min) resulted in decreased mitotic activity of bone-marrow cells for 30 days. Disturbances of cell division involved chromosomal stickiness and increase in the number of chromosomal aberrations. Ionizing radiations and the above dynamic factors produced a similar effect on oxidation metabolism in brain tissues and cellular division in hematopoietic organs. They differed

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L 47293-66

ACC NR: AP6031663 O

only in the level and dynamics of changes caused. The combined effect of irradiation and dynamic factors either did not exceed or was less than the effect of each of the indicated factors separately, a phenomenon seen as a radioprotective action of dynamic factors. The relations observed are similar to phenomena of dominance and parabiosis. Typical radiation reactions were intensified when irradiation was combined with factors having directly opposed effects. The variation and complexity of results of the combination of dynamic factors and irradiation are explained by the multiplicity of the mechanisms of the combined effect of radiation and nonradiation factors. The combined exposure to vibration and whole-body acute irradiation at a lethal dose showed that in a majority of cases the vibration effect on metabolism and CNS function was dominant at early stages, while that of irradiation prevailed at later stages. At the latest stages of exposure, the combined effect of vibration and irradiation was diverse and complicated. According to some indices, the trend of changes corresponded to the effect of one of the factors while the dynamics of the processes reflected the effect of the other one. Under the uniform action of both factors, the phenomena of partial summation of weakening of the radiation effect, and in several cases of a sharp increase of radiation effect by the opposite action of the vibration effect, were observed. Probable mechanisms of the phenomena described are considered. Orig. art. has: 13 figures. [SW]

SUB CODE: 06/ SUBM DATE: 14Dec65/ ORIG REF: 032/ OTH REF: 008/ ATD PRESS: 5095

Card 3/3

L 07485-67 EWT(1) /SCTB DD/GD

ACC NR: AT6025378 SOURCE CODE: UR/0000/66/000/000/0125/0128

AUTHOR: Kazanskaya, Ye. P.; Luk'yanova, L. D.

ORG: none

30
B+1

TITLE: Changes in respiration during vibration

SOURCE: AN SSSR. Institut biologicheskoy fiziki. Vliyaniye faktorov kosmicheskogo poleta na funktsii tsentral'noy nervnoy sistemy (Effect of space flight factors on functions of the central nervous system). Moscow, Izd-vo Nauka, 1966, 125-128

TOPIC TAGS: biologic respiration, biologic vibration effect, rat, biosensor, ECG, biologic metabolism / EKPSCh-3ECG

ABSTRACT:
Respiratory changes in response to vibration were studied using male Wistar rats weighing 200-250 g. The animals were subjected to 15 min of vibration (frequency 70 cps, amplitude 0.4 mm). A special sensor attached to the rat's ribcage and an EKPSCh-3 electrocardiograph were used to record respiration. Graphs of respiratory movements for individual rats show the lack of uniformity in respiration under the influence of vibration. Although in the first vibration period a general tendency to increase in respiratory frequency was observed, reactions in

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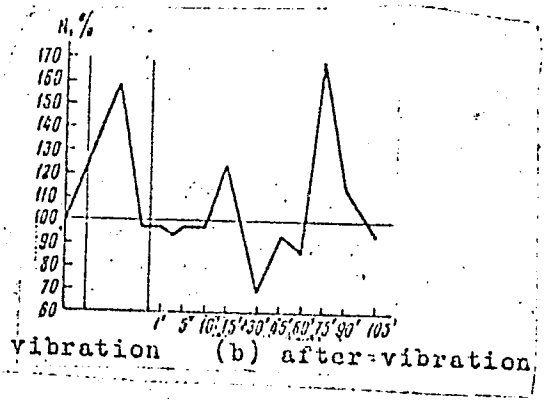
the second respiration phase and in the postvibration period varied with individual rats (see Figs. 1 and 2).



(a) vibration (b) after-vibration

Fig. 1. Changes in the frequency of respiratory movements in rat No. 1 during and after vibration. a - vibration; b - after vibration.

On the abscissa -- time from the beginning of vibration in minutes. On the ordinate -- frequency of respiratory movements, expressed in % of the average initial level. [These designations apply to both figures]

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L 07465-67
ACC NR: AT6025378

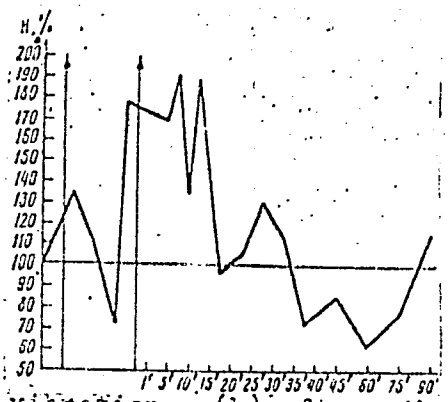

Fig. 2. Changes in the frequency of respiratory movements in rat # 3 during and after vibration.

(a) vibration (b) after vibration

It was further determined that changes in oxidative metabolism occurring during vibration are not related to changes observed in external respiration. Orig. art. has: 3 figures. [W.A. No. 22; ATD Report 66-997]

SUB CODE: 06 / SUBM DATE: 01Feb66

Card 3/3

L 07471-67 EWT(1) SCTB DD/GD

ACC NR: AT6025376 SOURCE CODE: UR/0000/66/000/000/0095/0104

AUTHOR: Luk'yanova, L. D.; Ambrosova, S. M.

ORG: none

TITLE: Effect of vibration stimulus on brain oxidative metabolism in animals with partially excluded auditory and vestibular analyzers

SOURCE: AN SSSR. Institut biologicheskoy fiziki. Vliyaniye faktorov kosmicheskogo poleta na funktsii tsentral'noy nervnoy sistemy (Effect of space flight factors on functions of the central nervous system). Moscow, Izd-vo Nauka, 1966, 95-104

TOPIC TAGS: central nervous system, vestibular function, biologic vibration effect, rat, brain tissue, biologic metabolism, polarographic analysis, otolaryngology, brain, oxygen consumption, human sense

ABSTRACT:

As part of a continuing effort to clarify the complex relationships between analyzers, experiments were conducted to study the effect of vibration on central nervous system function with partial exclusion of the vestibular analyzer and various cortical analyzers. Male white rats (Wistar strain) weighing 200-250 g were used. Oxygen content in rat-brain tissue was determined polarographically, under normal conditions and during

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ACC NR: AT6025376

vibration. Exclusion of the external and middle auditory analyzer was accomplished by perforating the eardrums and removing the auditory ossicles. After oxidative metabolism was determined in the sensorimotor and auditory areas of the cortex, in the caudate nucleus, the reticular nucleus of the thalamus, and the cerebellar cortex, the otoliths of these animals were destroyed. All animals were subjected to 15 min of vibration, with a frequency of 70 cps and an amplitude of 0.4 mm.

Experimental results showed that partial exclusion of the auditory analyzer in rats decreases the stimulating effect of vibration in the auditory area of the cortex, in the caudate nucleus and the reticular nucleus of the thalamus, and increases the stimulating effect of vibration in the sensorimotor area of the cortex. The parallelism in effects on the auditory area of the cortex and on the caudate nucleus indicates the direct connections existing between these two areas.

Preliminary partial exclusion of the vestibular analyzer in rats exposed to vibration causes a decrease in oxygen consumption in the sensorimotor area of the cortex and in the caudate nucleus, as compared with intact animals. These results seem

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ACC NR: AT6025376

to indicate the close functional relationship between the vestibular analyzer and sensorimotor-cortical analyzers.

Vibration stimulus of intact animals in the second and third stages of ether or chloroform anesthesia has a "releasing" effect, restoring the oxygen consumption in brain tissue to the normal level in unanesthetized animals. However, vibration stimulus of anesthetized animals with partially excluded vestibular analyzers does not have a substantial releasing effect on brain oxidative metabolism.

It was found that exclusion of the vestibular analyzer seriously disrupts normal interaction between cortex and subcortex. The difference between brain oxygen comsumption on the first day of vibration and subsequently shows the existence of temporary compensation on the first days after destruction of the otoliths, an adaptation which is easily destroyed under the influence of vibration. On the whole, results of these experiments underscore the extraordinarily important role of the vestibular analyzer (otoliths) in the perception of vibration stimuli and in those processes developing in different parts of the central nervous system under the influence of vibration.

Orig. art. has: 5 figures. [W.A. No. 22; ATD Report 66-99]

SUB CODE: 06 / SUBM DATE: 01Feb66

Card 3/3 gd

L 07472-67 EWT(1) SCTB DD/GD

ACC NR: AT6025377 SOURCE CODE: UR/0000/66/000/000/0105/0124

AUTHOR: Luk'yanova, L. D.; Kol'tsova, A. V.; Meyzorov, Ye. S.; Kazanskaya, Ye. P.

37
2 B+1

ORG: none

TITLE: Investigation of the connection between cerebral oxygen metabolism, its electrical activity, and the conditioned reflex activity of animals after vibration

SOURCE: AN SSSR. Institut biologicheskoy fiziki. Vliyaniye faktorov kosmicheskogo poleta na funktsii tsentral'noy nervnoy sistem (Effect of space flight factors on functions of the central nervous system.) Moscow, Izd-vo Nauka, 1966, 105-124

TOPIC TAGS: bioelectric phenomenon, rat, cerebrum, biologic vibration effect, conditioned reflex, oxygen consumption, eeg, biologic metabolism, reflex activity

ABSTRACT:

Methods used in previous studies by the author were applied to this expanded study of the effects of vibration (70 cps, 0.4 mm, 15-min exposure duration, up to 30 exposures) on the cerebral activity of rats. As in a previous study, vibration caused phased shifts in some indices of the functional condition of the brain.

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ACC NR: AT6025377

The first phase, which occurred after 1--4 exposures, was characterized by the development of general inhibition in the form of decreased cerebral oxygen consumption, corresponding EEG changes, intensification of very slow oscillations of the potential, and complete elimination of conditioned reflexes.

The second phase, which occurred after the fourth exposure, was marked by the development of compensatory and adaptive processes and relative functional normalization. Diminished changes in oxygen metabolism were observed, together with corresponding EEG indexes and the recovery of natural conditioned reflexes followed by the development of artificial reflexes (those induced by experimental parameters).

The third phase, occurring after 20--25 exposures, was characterized by a general decrease in the functional activity of upper cerebral centers. Oxygen consumption decreased, bioelectrical activity during and after vibration was depressed, and conditioned reflex activity was maintained at a low level long after the last exposure. Orig. art. has: 10 figures and 1 table.

[W.A. No. 22; ATD Report 66-99]

SUB CODE: 06 / SUBM DATE: 01Feb66

Card 2/2 gd

ACC NR: AT6036639 SOURCE CODE: UR/0000/66/000/000/0257/0258

AUTHOR: Livshits, N. N.; Apanasenko, Z. I.; Kuznetsova, M. A.; Luk'yanova, L. D.; Mayzerov, Y. S.

ORG: none

TITLE: Combined effect of vibration and ionizing radiation on the metabolism and function of the central nervous system [Paper presented at the Conference on Problems of Space Medicine held in Moscow from 24-27 May 1966]

SOURCE: Konferentsiya po problemam kosmicheskoy meditsiny, 1966. Problemy kosmicheskoy meditsiny. (Problems of space medicine); materialy konferentsii, Moscow, 1966, 257-258

TOPIC TAGS: space physiology, combined stress, biologic vibration effect, ionizing radiation biologic effect, muscle physiology, electrophysiology, central nervous system, rat, rodent

ABSTRACT:

Rats and guinea pigs were exposed to the complex effects of vibration (70 cps, 0.4 mm, 15 min) before, or both before and after, exposure to a single lethal dose (500--600 r) of ionizing radiation. The effect of this particular combination of stress factors was tested on oxidative processes in the brain tissues, on the characteristics of the vestibular reflex, and on the bioelectrical activity of skeletal muscles in a state of relative rest.

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Results showed a complete dominance of the effects of vibration.

Completely analogous results for vestibular reflexes were obtained when vibration was combined with prolonged gamma irradiation (500 r over a 14-hr period). Vibrational effects were also dominant with respect to conditioned feeding reflexes when vibration was followed by irradiation with a dose of 50 r.

This masking of the radiation effect was observed in those cases in which the effects of the two factors tended to counteract each other. But the masking effect was also observed when influences of the two factors were analogous and could be distinguished from each other only by their magnitude or dynamics. In this last case no summation of similar effects was observed, which can be attributed to the protective effect of vibration. The protective effect was confirmed by the fact that vibration tended to weaken leukopenia produced by radiation.

At the same time results were not completely uniform. The combined effect of vibration and either acute or fractionated irradiation on the basic characteristics of unconditioned defense reflex showed that vibrational effects were dominant in some cases and radiation effects were domi-

ACC NR: AT6036639

nant in others. Radiation effects tended to dominate as the time after exposure increased. Investigation of the oxidative processes in the brain tissues showed no summation of analogous effects even at the later stages of the investigation. However, when observations were made of functional changes of various parts of the central nervous system, a complex combined effect of both factors was found, which does not fit the pattern of the protective effects of vibration.

The variety of changes in radiation effects due to the influence of vibration can be explained by the multiplicity of mechanisms of combined effects of radiation and vibration. The more significant factors which can affect the influence of radiation are: the oxygen effect, changes in the functional condition of the central nervous system due to effects of vibration, interaction between centers of the nervous system, the course of reparative and compensatory processes, and others. [W. A. No. 22; ATD Report 66-116]

SUB CODE: 06 / SUBM DATE: 00May66

Card 3/3

L 07473-67 EWT(1) SCTB DD/GD

ACC NR: AT6025375 SOURCE CODE: UR/0000/66/000/000/0081/0094

AUTHOR: Luk'yanova, L. D. and Kazanskaya, Ye. P.

ORG: None

TITLE: Problem of the functional significance of changes in cerebral bioelectric activity and its cerebral oxidative capacity during vibration

SOURCE: AN SSSR. Institut biologicheskoy fiziki. Vliyaniye faktorov kosmicheskogo poleta na funktsii tsentral'noy nervnoy sistemy (Effect of space flight factors on functions of the central nervous system). Moscow, Izd-vo nauka, 1966, 81-94

TOPIC TAGS: bioelectric phenomenon, cerebrum, biologic metabolism, biologic vibration effect, rat, EEG, oxygen consumption, human sense

ABSTRACT:

The oxygen metabolism of the brain as a function of its bioelectricity was studied in rats exposed to multiple vibration (0.4 mm, 70 cps, exposure duration 15 min). The method of polarographically determining oxygen tension in the brain was the same as used in previous studies (Luk'yanova, 1964). EEG's were taken and the tissue diffusion current was measured using bipolar platinum electrodes from the sensorimotor, visual, audio-cortical, and caudate nucleus regions.

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ACC NR: AT6025375

During vibration tests, rats were allowed to move freely in a container fixed to the surface of the vibration stand. Results of oxygen tests conducted in a container with a 98%-99% O_2 mixture are shown in graphs. Other graphs show: 1) the types of changes in EEG indices which occur during vibration; 2) dynamics of changes in O_2 tension as a function of vibration; 3) changes in cerebral bioelectricity of individual animals as a function of the number of exposures to vibration.

Experiments showed that during vibration, stable foci of excitability associated with an increased level of oxygen consumption develop. These shifts are accompanied by hypersynchronized, low-frequency, sinusoidal oscillations with a 1-cps frequency. This phase of increased oxygen consumption (or excitability phase) amplifies in time and is accompanied by marked changes in cerebral bioelectricity, suggesting that this may be a compensatory - adaptive period. Compensatory-adaptive mechanisms which lower the vibration sensitivity of animals occur as a result of decrease in excitation processes. However, the shift in oxygen metabolism was not always accompanied by changes in cerebral bioelectricity. Changes in cerebral bioelectricity during vibration occur in two phases; one phase is

L 07473-67

ACC NR: AT6025375

characterized by general excitation which affects various cerebral areas, and the other phase in characterized by concentration of an excitation process in the sensorimotor and visual cortices. Orig. art. has: 8 figures. [W.A. No. 22; ATD Report 66-99]

SUB CODE: 06 / SUBM DATE: 01Feb66

Card 3/3

ACC NR: AT6036644 SOURCE CODE: UR/0000/66/000/000/0266/0268

AUTHOR: Luk'yanova, L. D.; Kazanskaya, Ye. P.; Kol'tsova, A. V.; Meyzerov, Ye. S.

ORG: none

TITLE: Investigation of the interdependence between the functional activity of the brain and brain oxygen metabolism during stimulation by vibration [Paper presented at the Conference on Problems of Space Medicine held in Moscow from 24-27 May 1966]

SOURCE: Konferentsiya po problemam kosmicheskoy meditsiny, 1966. Problemy kosmicheskoy meditsiny. (Problems of space medicine); materialy konferentsii, Moscow, 1966, 266-268

TOPIC TAGS: vibration biologic effect, central nervous system, electroencephalography oxygen consumption

ABSTRACT:
After exposure to vibration (70 cps, 0.4 mm, 15 min) a phase character in changes of various indices of higher brain sections is observed. One min after exposure to vibration, slow (1--3 cps), high voltage (500--700 v), hypersynchronized waves (HSW) were noted in the EEG's of animals. These were especially pronounced in the sensorimotor and visual cortices and coincided with a sharp increase in oxygen consumption in all sections of the brain. Repeated exposure caused a stage of HSW generalization in all brain sections subsequent to their concentration. When oxygen consumption in

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animals decreased during stressor stimulation, HSW was either irregular or did not occur.

A sharp decrease in oxygen consumption, disappearance of HSW, and manifestations of burst activity were noted after vibration in all brain sections. At the same time, a complete disinhibition of conditioned and unconditioned reflexes was noted, which indicated the development of generalized inhibition in higher brain sections. A two-wave decrease in oxygen consumption after vibration coincided in time with a two-phased intensification of the superslow potential and an intensification of hourly fluctuations. All this indicated a sharp disruption in normal functional nervous system interrelationships during this period.

The multiple application of a vibration stimulus caused an intermediate state characterized by compensation, adaptation, and relative functional normalization. A decrease in brain metabolic shifts was noted especially after vibration. The latent period of HSW development steadily increased in the visual and sensorimotor sections of the brain. Dominating rhythm in the auditory cortex and motor region of the subcortex became low-frequency (8--12 oscillations/sec), synchronized rhythms superimposed on HSW. The number of "fluctuations" and burst activity after vibration decreased and

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the duration of the normalization of these parameters was shortened after each exposure to vibration. Almost immediately after vibration, natural and conditioned reflexes were observed. The period of relative normalization during the repeated action of vibration alternated with a period of disrupted compensation and adaptation as reflected in a steady depression of rhythms during and after vibration. The level of conditioned reflexes decreased compared to normal levels and did not recover until 3 weeks after termination of the final exposure to vibration. The phase of increased oxygen consumption developing during vibration was not replaced by a decrease phase and continued to increase steadily. The artificial exclusion of peripheral impulsation by means of the partial exclusion of auditory and vestibular analyzers decreased the effect of vibration stimulus on the EEG of animals and brain metabolism. The establishment of compensatory adaptations took place without lowering the general functional level.

These data indicate that during multiple exposure to vibration, a general decrease in the excitability of the central nervous system to peripheral impulsation occurs as a result of the depletion of neural processes.

/W. A. No. 22; ATD Report 66-116/

SUB CODE: 06 / SUBM DATE: 00May66

Card 3/3

Luk'yanova, L. I.

PHASE I BOOK EXPLOITATION SOV/4386

Moscow. Fiziko-khimicheskiy institut

Problemy fizicheskoy khimii; trudy, vyp. 2 (Problems in Physical Chemistry; Transactions of the Institute, no. 2). Moscow, Goskhimizdat, 1959. 202 p. 1,000 copies printed.

Editorial Board: Ya. M. Varshavskiy, Doctor of Chemical Sciences; G. S. Zhdanov, Doctor of Chemical Sciences; V. A. Kargin, Academician; Ya. M. Kolotyrkin, Doctor of Chemical Sciences (Resp. Ed.); S. S. Medvedev, Academician; S. Ya. Pshezhetskiy, Doctor of Chemical Sciences; V. M. Cherednichenko, Candidate of Chemical Sciences; V. S. Chesalova (Editorial Secretary), Candidate of Chemical Sciences; Ed.: I. A. Myasnikov; Tech. Ed.: Ye. G. Shpak.

PURPOSE: This collection of articles is intended for physical chemists.

COVERAGE: The collection is the second issue of the Transactions of the Scientific Research Institute of Physical Chemistry imeni L. Ya. Karpov. It contains 17 articles which review

Card 1/5

MOROZOV, N.M.; IUK'YANOVA, L.I.; TEMKIN, M.I.

Kinetics of ammonia synthesis on alloys of iron and cobalt. Kin. i kat. 6 no.1:82-88 Ja-F '65.

(MIRA 18:6)

1. Fiziko-khimicheskiy institut imeni Karpova, Moskva.

L 59520-65 EWT(d)/T/EWP(1)/EED-2 Pq-4/Pg-4/Pk-4 IJP(c) BB/GG
ACCESSION NR: AP5015535 UR/0286/65/000/008/0069/0070
681.142.32

AUTHOR: Kagan, B. M.; Dolkart, V. M.; Novik, G. Kh.; Kanevskiy, M. M.; Luk'yanova, L. M.; Stepanov, V. N.; Ul'yanova, N. K.; Koltypin, I. S.; Adas'ko, V. I.; Molchanov, V. V.; Voitelev, A. I.

TITLE: General-purpose digital control computer. Class 42, No. 170218

SOURCE: Byulleten' izobreteniy i tovarnykh znakov, no. 8, 1965, 69-70

TOPIC TAGS: computer, control computer, arithmetic unit, adder, core memory, B register, strobing amplifier, analog digital converter, digital analog converter

TOPIC TAGS: [illegible] control computer, arithmetic unit, adder, core memory, [illegible] register, strobing amplifier, analog digital converter, digital analog converter

ABSTRACT: An Author Certificate has been issued for a digital control computer consisting of an arithmetic unit, magnetic core memory unit, control unit, input/output unit, magnetic tape memory, teletype, perforator, universal converter, and operator console. The system is economical, fast-acting, and reliable, due to a number of distinct features incorporated into its design. Economy is achieved by a special arrangement of the adder and the memory unit with its output parity check control. Speed is increased by an asynchronous mode of operation, and a special design of the adder, in which the time necessary for information distribution is kept to a mini-

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ACCESSION NR: AP5015535

num. High overall reliability is achieved by a temperature-stabilized, high-speed, disturbance-immune memory unit design. Other reliability features include the absence of interference between the B-register contents and its counter, a longitudinal parity check for the punch tape, an automatic tape misalignment guard, and automatic drift compensation in the multichannel A/D and D/A converters. [BD]

ASSOCIATION: Vsesoyuznyy Ordena trudovogo krasnogo znameni nauchno-issledovatel'skiy institut electromekhaniki (All-Union Scientific Research Institute of Electromechanics)

SUBMITTED: 06Mar64 ENCL: 00 SUB CODE: DP

NO REF SOV: 000 OTHER: 000 ATD PRESS: 4053

Card 2/2

LUK'YANOVA, L. P.

PA 7/49T20

USSR/Communications Jun 48
Telephones, Automatic
Efficiency, Industrial

"Every Worker at the ATS a Stakhanovite," L. P. Luk'yanova, Sta Engr, Krasnopresnensk Automatic Telephone Sta, 1 p

"Vest Svyazi - Elektrosvyaz'" No 6 (99)

Work of operating staff at a Moscow automatic telephone station was unsatisfactory. Bad lighting reflected in poor quality and low output of work. Now each bench has its own lamp. Each inspector used to refit any type of apparatus; now intensive

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USSR/Communications (Contd) Jun 48

specialization is the rule. Foreman checks all jobs when completed on special apparatus installed in the shop. Cites various other improvements.

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LUK'YANOVA, L.V.

Some data on the properties of ice of the Caspian Sea. Trudy Tbil.NIGMI no.9:192-195 '61. (MIRA 15:3)

1. Institut geografii AN Azerbaydzhanskoy SSR.
(Caspian Sea--Sea ice)

LUK'YANOVA, L.V.

Physicochemical properties of the Caspian Sea ice. Izv.AN Azerb. SSR.Ser.geol.-geog.nauk i nefti no.3:137-146 '62. (MIRA 15:12)
(Caspian Sea—Sea ice)

L 13350-63 EWP(j)/EPF(c)/EWT(m)/BDS ASD Pc-4/Pr-4 RM/WW

ACCESSION NR: AP3002626 S/0079/63/033/006/1945/1951

AUTHOR: Kochkin, D. A.; Luk'yanova, L. V.; Reznikova, Ye. B.

TITLE: Investigations in the area of oxygen-containing organotin and organolead compounds. 3. Preparation and properties of stannanols, triphenylplumbanol, polydiphenylplumboxane and their derivatives

SOURCE: Zhurnal obshchey khimii, v. 33, no. 6, 1963, 1945-1951

TOPIC TAGS: oxygen-containing organotin, organolead compounds, stannanol, triphenylplumbanol, polydiphenylplumboxane, tetramethylstannane, trimethylbromostannane, triethylstannanol, hexaethyldistannoxane, dimethyethylchloromethylsilane, dimethylethylmagnesium-chloromethylsilane, dimethylethylsilylpropanol, dimethylethylsilyl triethylstannyl methane, triethylsiloxy triethylsiloxy triethylstannane, glycidoxy tributylstannane, triphenylmethacryloxyplumbane, polydiphenylplumboxane, hydrolysis, dehydration, IR spectrum

ABSTRACT: The following stannanols, stannoxanes, plumbanols and plumboxanes and derivatives were synthesized: tetramethylstannane, trimethylbromostannane, triethylstannanol, hexaethyldistannoxane, dimethyethylchloromethylsilane, dimethylethylmagnesium-chloromethylsilane, dimethylethylsitylpropanol, dimethylethylsilyl

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ACCESSION NR: AP3002626

2

triethylstannyl methane, triethylsiloxy triethylstannane, glycidoxy tributylstannane, triphenylmethacryloxy-plumbane, polydiphenylplumboxane. The properties, especially hydrolysis, dehydration and product disproportionation, of these compounds were investigated; their IR spectra were obtained. "Yu. P. Novichenko took part in carrying out the syntheses." Orig. art. has: 3 figures, 5 equations.

ASSOCIATION: Vsesoyuzny*y nauchno-issledovatel'skiy vitaminny*y institut Ministerstva zdravookhraneniya SSSR (All-Union Scientific Research Vitamin Institute, Ministry of Public Health, SSSR)

SUBMITTED: 050ct61 DATE ACQ: 20Jul63 ENCL: 00

SUB CODE: 00 NO REF SOV: 016 OTHER: 010

Card 2/2

LUK'YANOVA, L. V.

SAMOKHVALOV, G.I.; MIROPOL'SKAYA, M.A.; LUK'YANOVA, L.V.; PREOBRAZHENSKIY, N.A.

Synthesis of polyene compounds. Part 13: Synthesis of polyene ketones by pyrolysis of acetoacetic esters of tertiary acetylene carbinols. Zhur. ob. khim. 27 no.9:2501-2506 S '57. (MIRA 11:3)
(Pyrolysis) (Ketones) (Esters)

LUK'YANOVA, L.V.

Use of spectral methods for the analysis of vitamins. Trudy VNIVI 6:269-280 '59. (MIRA 13:7)

1. Vsesoyuznyy nauchno-issledovatel'skiy vitaminnyy institut. Sinteticheskaya laboratoriya.
(SPECTRUM ANALYSIS) (VITAMINS)

AUTHORS: Samokhvalov, G. I., Vakulova, L. A., Mayranovskiy, S. G., Luk'yanova, L. V. SOV/79-29-6-37/72

TITLE: Synthetic Investigations in the Field of the Polyene Compounds (Sinteticheskiye issledovaniya v oblasti poliyenovykh soyedineniy). XIV. The Direction of Hydration of the Acetylene Bond in a Molecule Containing a Diene System Conjugated With the Carbonyl Group (XIV. Napravleniye gidratatsii atsetilenovoy svyazi v molekule, soderzhashchey diyenovuyu sistemu, sopryazhennuyu s karbonil'noy gruppoy)

PERIODICAL: Zhurnal obshchey khimii, 1959, Vol 29, Nr 6, pp 1936 - 1945 (USSR)

ABSTRACT: A considerably large group of oxygen-containing carotenoids belongs to the natural polyene pigments. Mixoxanthin, which has a vitamin-A effect occurs in marine invertebrates and marine algae. Its structure has not yet been investigated in detail. Beside the β-ionone ring and the polyene chain, characteristic of the carotenoids, it has a cyclic or an aliphatic grouping with a carbonyl group in position 4 (formula (I) or (II)). In synthesizing this part of the molecule of mixoxanthin the authors tried to bring about the hydration of 3,7-dimethyl octadiene-2,6-in-4-al accord-

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ing to the scheme 1((III → (IV) → (V)). In this connection an explanation of the process of hydration is given (Refs 5-8). The synthesis of compound III was carried out according to scheme 2. This hydration was carried out in an aqueous solution of methanol of mercury sulphate with careful heating. The absence of the color reaction with iron chloride in the hydration product indicates the formation of (IV) of (V). From this product a crystalline semicarbazone with a melting point of 152-153° was obtained which according to its composition corresponds to the keto aldehyde $C_{10}H_{14}O_2$. For the purpose of comparing the optical and polarographic properties of this compound the keto aldehyde (XI), with already determined position of the carbonyl groups, was synthesized and its semicarbazones at the aldehyde group (XII) were obtained (melting point 197-198°) with a certain position of the semicarbazone residue at the keto group (XIV)(Scheme 3). The comparison of the ultraviolet absorption spectra of the semicarbazone of the keto aldehyde $C_{10}H_{14}O_2$ (Figs 1,2) as well as the polarographic comparison of the two compounds indicate the same

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structure with respect to the position of the carbonyl groups (Fig 3). Thus, 3,7-dimethyl octadiene-2,5-on-4-al (V) in the case of which all compounds contained are conjugated, is formed in the hydration of the triple bond in the molecule (III) containing a diene system conjugated with the carbonyl group. The infrared absorption spectra taken confirm the conclusions drawn. The authors thank N. A. Preobrazhenskiy for the interest he showed in the investigations. There are 5 figures, 1 table, and 18 references, 6 of which are Soviet.

ASSOCIATION: Vsesoyuznyy nauchno-issledovatel'skiy vitaminnyy institut (All-Union Scientific Research Institute for Vitamins)

SUBMITTED: April 14, 1958

Card 3/3

MIKHLIN, E.D.; SHAKHOVA, M.F.; LUK'YANOVA, L.V.; Prinimala uchastiye: KISELEVA, L.F., laborantka

Phytol, a preparation from peppermint wastes. Trudy VNIVI 8:57-65 '61. (MIRA 14:9)

1. Laboratoriya pererabotki rastitel'nogo syr'ya i khimiko-analiticheskaya laboratoriya Vsesoyuznogo nauchno-issledovatel'skogo vitaminnogo instituta.
(Phytol) (Peppermint)

LUK'YANOVA, L.V.

Spectrum determination of isomers of semiproducts in vitamin synthesis. Trudy VNIVI 8:104-114 '61. (MIRA 14:9)

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(Spectrum analysis) (Isomers) (Vitamins)

SAMOKHVALOV, G.I.; SHAKHOVA, M.K.; BUDAGYANTS, M.I.; VEYNBERG, A. Ya.; LUK'YANOVA, L.V.; PREOBRAZHENSKIY, N.A.

Synthetic studies of flavonoids. Part 2: Synthesis of 3- nitroflavanone. Zhur. ob. khim. 31 no.4:1147-1150 Ap '61. (MIRA 14:4)

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VAKULOVA, L.A.; FOKINA, L.N.; FRADKINA, T.S.; LUK'YANOVA, L.V.; SAMOKHVALOV, G.I.

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Lipoic acid. Part 2: Synthesis of benzhydryl ammonium salts of D,L- α-lipoyl-L-phenylalanine, -L-methionine, and -L-valine. Zhur. ob. khim. 34 no.11:3665-3667 N '64 (MIRA 18:1)

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(OXIDATION, PHYSIOLOGICAL)

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